

# Geophysical Signal Processing 101

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Two of the geophysical industry's most recognized and decorated MIT Ph.D's in geophysics who have collaborated for decades on books, papers, and presentations host this live webinar.



## A Live Webinar

May 23 - 26, 2017

Four Half-Days 8:00 am - 12:00 pm Central Time (USA)

This is a course for those new to geophysical signal processing, or who have forgotten what they learned about it. We start with an explanatory discussion of the seismic method, covering seismic wave motion, seismic migration, full waveform inversion (FWI) and visualization. The successful performance of migration and FWI depends on our ability to preprocess the field data so that it is as free as possible from performance-degrading events, namely the various kinds of noise. We therefore introduce elementary signal processing tools such as convolution and correlation, along with the basic means to compute them. We follow up with a study of the design of digital filters, their inverses, and their stability issues. Finally we deal with optimal digital filters, and how they are used to solve various practical problems. Throughout the course we illustrate concepts with simple examples, and invite listeners to solve small illustrative "pencil and paper" problems after (or even during) the lectures.

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